

ACCESSION NR: AP4012966

$$\varphi(\vartheta) = \varphi(-\vartheta), \quad (4)$$

$$\omega(\vartheta) = -\omega(-\vartheta). \quad (5)$$

From here:

$$\varphi(r, \vartheta, z) = \sum_{n=1}^{\infty} \sum_{v=0}^{\infty} (-1)^v \frac{[N(2n-1)]!}{4^v v! [N(2n-1)+v]!} \Phi_{N(2n-1)}^{(zv)} r^{N(2n-1)+zv} \cos N(2n-1) \vartheta, \quad (6)$$

$$\omega(r, \vartheta, z) = \sum_{n=1}^{\infty} \sum_{v=0}^{\infty} (-1)^v \frac{[N(2n-1)]!}{4^v v! [N(2n-1)+v]!} \Omega_{N(2n-1)}^{(zv)} r^{N(2n-1)+zv} \sin N(2n-1) \vartheta, \quad (7)$$

The lens field near the axis was examined. Authors assumed that binomial coefficients are connected by the equality

$$C_N' = \frac{N-l+1}{l} C_{N-1}'.$$

(8)

Card 3/5

ACCESSION NR: AP4012966

Then

$$\begin{aligned} x'' &= -\frac{e}{m_0 v^3} \sqrt{1 - \frac{v^2}{c^2}} \left[ \Phi_N - \frac{v}{c} \Omega_N \right] \times \\ &\times [C_N x^{N-1} - 3C_N x^{N-3} y^2 + 5C_N x^{N-5} y^4 - \dots], \\ y'' &= +\frac{e}{m_0 v^3} \sqrt{1 - \frac{v^2}{c^2}} \left[ \Phi_N - \frac{v}{c} \Omega_N \right] \times \\ &\times [2C_N x^{N-3} y - 4C_N x^{N-5} y^3 + 6C_N x^{N-7} y^5 - \dots]. \end{aligned} \quad (9)$$

The condition for achromaticity will be the equality to zero of the first derivative with respect to velocity, of the right sides of (9). The connection between the electrostatic and magnetic fields for a given velocity  $v_0$  can then be found by

$$\Phi_N(z) = \frac{v_0 c}{2c^2 - v_0^2} \Omega_N(z) \quad (10)$$

or, in a non-relativistic approximation

$$\Phi_N(z) = \frac{v_0}{2c} \Omega_N(z). \quad (11)$$

Card 4/5

ACCESSION NR: AP4012966

The ratio between the coefficients  $\overline{\alpha}_N$  and  $\alpha_N$  is identical for all lens, independent of the number of poles contained in them. Orig. art. has: 1 figure and 15 equations.

ASSOCIATION: Fiziko-tekhnicheskii institut im. A.F. Ioffe  
Akademii nauk SSSR (Physics-engineering institute Academy of  
Sciences SSSR)

SUBMITTED: 10Sep63

DATE ACQ: 26Feb64

ENCL: 00

SUB CODE: PH

NO REF SOV: 002

OTHER: 000

Card 5/5

ACCESSION NR: AP4019973

S/0020/64/154/006/1321/1324

AUTHOR: Dy\*mnikov, A. D.; Fishkova, T. Ya.; Yavor, S. Ya.

TITLE: Spherical aberration of a two-dimensional electrostatic quadrupole lens without antisymmetric planes

SOURCE: AN SSSR. Doklady\*, v. 154, no. 6, 1964, 1321-1324

TOPIC TAGS: spherical aberration of electrostatic lens, quadrupole electrostatic lens, electron microscope lens, spherical aberration correction, electron microscope, spherical aberration

ABSTRACT: In the present paper, a method has been developed for the correction of spherical aberration which is based on the maintaining of symmetry planes of the field in the absence of antisymmetry planes. An example of such asymmetry is presented by an electrostatic lens which has different distances between electrodes of the same sign. The possibility of such a correction is shown on a two-dimensional electrostatic quadrupole lens. In the equations for trajectories of

Card 1/2

ACCESSION NR: AP4019973

charged particles, terms are considered which are necessary for the computation of aberrations of the third order. The computation shows that spherical aberration cannot be compensated along the whole image. The length of the linear image is not greatly affected by spherical aberration. The suggested method of correction permits one either to reduce the spherical aberration along the whole length of the image, or to completely compensate it in the center. Orig. art. has: 3 figures and 24 equations.

ASSOCIATION: Fiziko-tekhicheskly institut im. A. F. Ioffe Akademii Nauk SSSR (Physics-Engineering Institute, Academy of Sciences, SSSR)

SUBMITTED: 24Sep63

DATE ACQ: 23Mar64

ENCL: 00

SUB CODE: PH

NO REF SOV: 004

OTHER: 000

Card 2/2

L 59638-65 EWT(1)/EFA(w)-2/EEG(c)/1/EEG(h)-2/EWA(m)-2 Pz=6/Pq=4/Pt=4

30  
29  
8

194040042

3/3057444 31/02/11 11/2/14

Yavor, S.Ya.

of electric and magnetic quadrupole lenses with negative aberration

tehnicheskoy fiziki, v.34, no.11, 1974, 2044-2048

electron optics, magnetic quadrupole lens, electric quadrupole lens, aberration.

ABSTRACT An expression for the chromatic aberration for a system of quadrupole lenses derived from the paraxial trajectory equations. This expression is valid, but it contains not only the lengths and positions of the lenses, but also the separations between successive lenses, but not the positions of the lenses. The lenses are also required to be regular, i.e., the field on the axis, i.e., the magnetic field is a function of  $x^2$  and the electric field is a function of  $y^2$ . This expression is discussed in detail for the case  $n=2$ . It is shown that the aberration can vanish or become negative only if the converging component is a magnetic lens and the diverging component an electrostatic

AP4049042

tripole doublet, therefore, cannot be symmetric in both mutually perpendicular planes containing the axis. The corresponding equations for a thin lens doublet is written, and it is shown that in this case the variations of the image position and the magnification are independent of each other in one plane. A symmetric plane doublet is also considered. A system described by the author can be made to produce a point image of a point source and to be achromatic in both planes either with the use of electrostatic or magnetic, or vice versa, fields. The two fields may be different. Original has 11 pages.

Electronically Institute in, U.S.S.R.  
Institute, AN SSSR

Approved

L 40739-65 EWT(1) Pg-4 IJP(c)

AF5007287

3/0067/85/038/003/0431/0840

...ov, A.D.; Fishkova, T.Ya.; Yavor, S.Ya.

dependence of the geometric parameters on the optical properties of a system of multiple lenses, analogous to an axially symmetric lens.

... tekhnicheskoy fiziki, v.35, no.3, 1965 42, 43

electron optics, magnetic quadrupole lens, axial symmetry.

Authors have previously described and discussed the type of quadrupole quadruplet consisting of two identical quadrupole doublets and having properties analogous to those of an axially symmetric lens (ZhTF 33,851,1963; Izv. Vuzovskoye Radiofizika 11,131,1963; Radiotekhnika i elektronika 8, 5, 1963) and Euro-Conférence on Electron Microscopy, Prague, 1964). The quadrupole doublets are capable of forming a true image and the compound lens has some advantages over axially symmetric lenses, including possibility of compensation of spherical and chromatic aberrations. For this purpose numerical computations of the first order optical properties of quadrupole doublets as functions of the system parameters, were then presented. The re-



L 40939-65

ACCESSION NR: AP5007287

sults of these calculations in graphical form suitable for preliminary design purposes at some length. The system parameters are the focal length of the doublet, the separation between them, the magnification between the doublets, and the excitation of one quadrupole. The positions of the quadrupoles are then determined by the condition for axial symmetry. Particular attention is given to conditions for minimum focal length magnification. "In conclusion, the authors express their deep thanks to A. Novikova for performing the laborious computations on the BESM-2 computer." Orig.art.hes; 2 formulas and 12 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.P.Ioffe AN SSSR Leningrad  
Physical Institute, AN SSSR)

1964

ENCL: 00

SEP 1964, EM

NOV 1964, GOR

OTHER: 003

DYMNIKOV, A.D.; FISHKOVA, T.Ya.; YAVOR, S.Ya.

Spherical aberration of the width of a linear image in a  
composite quadrupole lens. Zhur. tekhn. fiz. 35 no.4:759-761  
Ap '65. (MIRA 18:5)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR, Leningrad.

L 54759-65 EWT(1) Pq-4 IJF(c)  
 NR: AP5015631

UR/0057/65/035/006/1068/1076

Dymnikov, A.D.; Fishkova, T.Ya.; Yaver, S.Ya.

Spherical aberration of a combined quadrupole lens with a  
 shaped field distribution

Zhurnal tekhnicheskoy fiziki, v.35, no.6, 1965, 1068-1076

ABSTRACT: electron optics, magnetic quadrupole lens, electrostatic  
 quadrupole lens, spherical aberration

ANALYSIS: The authors calculate the spherical aberration of a com-  
 bined electrostatic and magnetic quadrupole lens similar to those for  
 which they have previously discussed chromatic aberration (ZhTF 34,  
 1964; 35, No.4, 1965). The calculations are based on formulas  
 published in the earlier papers. Formulas for the spherical aberration  
 are first derived for an arbitrary distribution of field  
 strength on the axis and these are then specialized to the case in  
 which the electric and magnetic fields are both proportional to

1/2

1977-65

ASSOCIATION NR: AP5015631

$1/(1 + (z/d)^2)^2$ , where  $z$  is the axial coordinate and  $d$  is a constant. Curves are given showing the spherical aberration coefficients as functions of the total excitation and of the ratio of the electric to magnetic field strength. The spherical aberration of a doublet consisting of two combined electrostatic and magnetic quadrupole lenses is discussed briefly and it is shown that the spherical aberration can be compensated over the entire length of the linear image. Calculations concerning doublets are in progress. Orig.art. has: 39 formulas and 5 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR, Leningrad (Physico-technical Institute, AN SSSR)

RECEIVED: 16Dec64

ENCL: 00

STB CODE: OP,FM

REF ID: A6V: 002

OTHER: 001

Card 2/2

L 3455-66 EWT(1) IJP(c)

ACCESSION NR: AP5017204

UR/0020/65/162/006/1265/1268

AUTHORS: Dymnikov, A. D.; Fishkova, T. Ya.; Yavor, S. Ya.

TITLE: Spherical aberration of a combined quadrupole lens with rectangular field distribution

SOURCE: AN SSSR. Doklady, v. 162, no. 6, 1965, 1265-1268

TOPIC TAGS: electron optics, magnetic quadrupole lens

ABSTRACT: In order to get around the mathematical difficulties involved in using a rectangular model for the calculation of spherical aberrations, the authors have derived for the spherical aberration expressions which do not contain the derivatives of the fields in explicit form. These expressions were obtained by solving, by perturbation theory, trajectory equations given in an earlier paper (ZhTF v. 34, 1711, 1964), and by subsequently transforming the obtained formulas by integration by parts. The particular analysis pertains to a field which is bounded in the axial direction when a pointlike object lying on the axis, as well as its linear image, are both situated in

Card 1/2

L 3455-66

ACCESSION NR: AP5017204

3  
a field-free space. Plots of the coefficients of spherical aberration, obtained on the basis of these calculations, are included. The results were compared with experimental data for a parallel beam and were found to be in good agreement. This report was presented by B. P. Konstantinov. Orig. art. has: 3 figures and 19 formulas

ASSOCIATION: Fiziko-tekhnicheskii institut im A. F. Ioffe Akademi nauk SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 31Dec64

ENCL: 00

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SUB CODE: CP

NR REF SOV: 002

OTHER: 001

BVK

Card 2/2

L 36550-66 EWT(1)/T IJP(c)

ACC NR: AP6015754

(A,N)

SOURCE CODE: UR/0048/66/030/005/0739/0741

AUTHOR: Dymnikov, A.D.; Fishkova, T.Ya.; Yavor, S.Ya.

ORG: none

TITLE: Dependence of the spherical aberration coefficients of a quadrupole lens on the object distance (rectangular model) /Report, Fifth All-Union Conference on Electron Microscopy held in Sumy 6-8 July 1965/

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v. 30, no. 5, 1966, 739-741

TOPIC TAGS: electron optics, spherical aberration, magnetic quadrupole lens, electrostatic field

ABSTRACT: Equations given elsewhere by the present authors (Dokl. AN SSSR, 162, 1265 (1965)) have been employed to calculate, with the aid of a computer, the spherical aberrations of magnetic and electrostatic quadrupole lenses. Curves are presented showing each of the four spherical aberration coefficients of both types of quadrupole lens as functions of the object distance for different values of the excitation. The principal spherical aberration coefficient for the converging plane is always positive and has a minimum; the relation between excitation and object distance for the minimum value of this coefficient is presented graphically. The spherical aberration in the width of a linear image in the median plane for a magnetic quadrupole lens is compared

Card 1/2

L 36550-66

ACC NR: AP6015754

with the corresponding quantity for an analogous axially symmetric lens; for equal object distances and focal lengths, the quadrupole lens has the smaller spherical aberration. Orig. art. has: 4 formulas, 9 figures, and 1 table.

SUB CODE: 20/

SUBM DATE: 00/

ORIG REF: 001/

OTH REF: 001

Card 2/2 *MLP*



PETUSHKOV, I.S., inzh.; SHVAL'BE, V.A., inzh.; DYMNIKOV, V.S., inzh.

Selecting a type of power for Kuznetsk Basin mines. Ugol' 40  
no.11:10-12 '65. (MIRA 18:11)

1. Kuznetskiy nauchno-issledovatel'skiy ugol'nyy institut.

BATUYEV, A.S.; DYMNIKOVA, L.P.

Influence of the cutting off of visual reception on various forms of motor acts in rabbits. Vop. srav. fiziol. anal. no. 1:72-78 '60.  
(MIRA 14:4)

1. The Higher Nervous Activity Physiological Laboratory, University of Leningrad.

(CONDITIONED RESPONSE) (EYE---WOUNDS AND INJURIES)

AP4043937 5/12/64 16/0051

Il'yutkin, G. N.; Dy\*mnikova, L. P.

Protective action of hypothermia against ionizing radiation

Meditainskaya radiologiya, v. 9, no. 9, 1964, 44-51

hypothermia, radioprotection, protective action, irradiation, ionizing radiation, radiation intensity, rat

The protective action of hypothermia against the effects of ionizing radiation was studied in dogs and rats. The body temperature of the dogs was reduced to 22—25C, and that of the rats, to 20—22C. The animals were then subjected to x-ray irradiation in a period of 1—24 hr. The state of hypothermia was maintained for a period of 1—24 hr. The investigations showed that radiation sickness in animals irradiated while in a state of hypothermia runs a milder course than in animals irradiated at normal body temperature. The course of the state of hypothermia in the animals after irradiation

NR: AP4045937

Lessening of the injurious effects of the ionizing radiation increase in the period of hypothermia was associated with a radiation injury. Orig. art. has 1 figure, 1 table.

INSTITUTION: Institut fiziologii im. I. P. Pavlova (Academy of Physiology, AN SSSR); Voenno-meditsinskaya akademiya (Academy of Military Medicine, S. M. Kirova (Academy of Military Medicine, AN SSSR)

19 Jan 64

ENCL: 00

19 Jan 64

NO. 827 SOV: 008

OTHER: 003

Cord 2/2

*Дьячкова, Ye. I.*

DYACHOVA, Ye. I.

"Clinical Aspect and Surgical Treatment of Penetrating Ulcers of the Stomach and Duodenum." Cand Med Sci, Khar'kov Medical Inst, Khar'kov 1955. (KL, No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions. (1h)

*DYMNIKOVA, Ye. I.*

DYMNIKOVA, Ye. I. (Khar'kov)

Clinical aspects and treatment of penetrating gastric and duodenal ulcers in adolescents. Klin.med. 35 no.11:97-101 N '57. (MIRA 11:2)

1. Iz kafedry obshchey khirurgii (zav. - prof. M.M.Levin) pediatri-  
cheskogo i sanitarno-gigiyenicheskogo fakul'tetov Khar'kovskogo  
meditsinskogo instituta (dir. - dotsent I.F.Kononenko)

(PEPTIC ULCER, perf.

in adolescents, clin. aspects & ther.)

(ADOLESCENCE, dis.

peptic ulcer, perf., clin. aspects & ther.)

DYMNKOVA, Ye.I., kand.med.nauk

Clinical, diagnostic and therapeutic aspects of acute appendicitis  
in advanced old age. Sov.med. 26 no.8:43-47 Ag '62.

(MIRA 15:10)

1. Iz kafedry obshchey khirurgii pediatricheskogo i sanitarno-  
gigiyenicheskogo fakul'tetov (zav. - prof. M.M.Levin) Khar'kovskogo  
meditsinskogo instituta (rektor - dotsent B.A.Zadorozhnyy).  
(APPENDICITIS) (GERIATRICS)

DYMNYI, Mikhail Gennadiyevich; VOYZVODIN, Ye.V., red.; ONOSKO, N.G.,  
tekh.n.red.

[Communist from Izhoraki] Kommunist s Izhorskogo. Leningrad,  
Lenizdat, 1959. 36 p. (MIRA 13:6)  
(Labor and laboring classes)



Dymotrowska M.  
EXCERPTA MEDICA Sec.12 Vol.9/6 Ophthalmology Jun 55

899. KRZAWICZ T., DYMOTROWSKA M. and KOZUCHOWSKA I. Inst. med. Pracy Wsi, Klin. Okulistycznej Akad. med., Lublin. \*Urazy narządu wzroku u pracowników rolnych. Injuries of the organ of vision in agricultural workers ANN.UNIV.LUBLIN, Sect.D. 1954, 8/1953 (167-212) Tables 19 Illus. 16

A clinical material of 598 cases of various eye injuries is statistically represented; the causes and sequelae are discussed. Finally the material is evaluated from the point of view of the diminution or loss of visual acuity. Forty-one eyes had to be enucleated, 47 remained blind.

Szmyt - Łódź

I 7027-66 EWT(1)/T/EDD(h)-3 LJP(c)

ACC NR: AF5026831

SOURCE CODE: UR/0286/65/000/017/0117/0117

AUTHOR: Frolova, V. S.; Yurovskiy, Kh. G.; Belonogov, B. I.; Fedichkina, A. A.;  
Dymov, A. F.

ORG: none

TITLE: A copying device for transferring a graphic image by photographic contact printing. Class 57, No. 174522 [announced by Organization of the Ministry of the Aviation Industry SSSR (Organizatsiya ministerstva aviatsionnoy promyshlennosti SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 117

TOPIC TAGS: photographic printing, printing machinery

ABSTRACT: This Author's Certificate introduces a copying device for transferring a graphic image by photographic contact printing. The installation contains an illuminator, a rotating table, and a clamping mechanism with vacuum contact between the original and the light-sensitive material. For airtight sealing during printing on large metal plates, the clamping mechanism is equipped with a cover made of an elastic film, e. g. polyethylene. This film covers the surface of the rotating table and is clamped around the edge of the table by an air-filled hose. This cover is wound on drums at the edge of the table.

UDC: 771.318.1

Card 1/2

L 7027-66

ACC NR: AP5026831

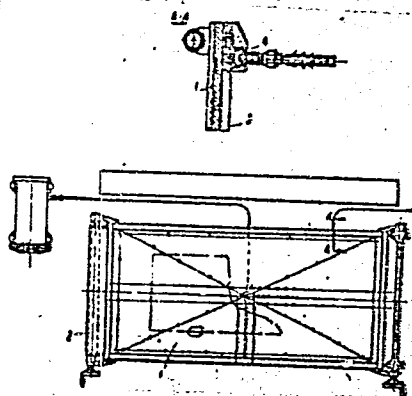


Fig. 1. 1--rotating table; 2--drums;  
3--cover; 4--hose

SUB CODE: IE/

SUBM DATE: 23Mar64/

ORIG REF: 000/

OTH REF: 000

BC  
Card 2/2

D YMOV, A.G.

MORDVINTSEV, F.A., podpolkovnik meditsinskoy sluzhby; LEVTSOV, N.P., mayor  
administrativnoy sluzhby; DYMOV, A.G., starshiy leytenant meditsin-  
skoy sluzhby

Using an aerosol generator operated by compressed air for disinsectiza-  
tion on ships. Voen.-med.zhur. no.7:73-74 J1 '56. (MLRA 9:11)  
(SPRAING AND DUSTING EQUIPMENT)  
(SHIPS--DISINFECTION)

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSING AND PROPERTIES INDEX																			
<p>7</p> <p>A quick determination of silica in aluminas. A. M. JAKOV... <i>Mineralogische Nachrichten</i> 5, 401-4 (1954). <i>Chem. Zentr.</i> 1955, II, 9; 11. For high control analysis the alumina is fused with <math>\text{KHSO}_4</math> in porcelain crucibles and the melt is dissolved in dil. <math>\text{H}_2\text{SO}_4</math> + <math>\text{HCl}</math> at <math>70^\circ</math>. Boiling must be avoided because Ti seps. out. The ppt. is filtered, washed with hot <math>\text{HCl}</math>, dried and burnt.</p> <p>ALFRED HENNING</p>																			
<p>ASM-A-1 METALLURGICAL LITERATURE CLASSIFICATION</p> <p>FROM SOURCE: 9</p> <p>RECORD NO. 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120</p> <p>RECORD NO. 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140</p>																			



1st and 2nd copies

PROCESSES AND PROPERTIES

ca

7

The determination of cinder inclusions in iron and steel. A. M. Zhurav. *Zavodskaya Lab.* 1932, No. 10, 38-51; *Chem. Zentr.* 1934, II, 3798. - Checking of the method of Filterer (cf. C. A. 25, 3848) indicated that this method is superior to all others for such detns.

M. G. Misur

ASB-11.4 METALLURGICAL LITERATURE CLASSIFICATION

RECORD NUMBER

RECORD DATE

RECORD TIME

RECORD PLACE

RECORD NAME

RECORD ADDRESS

RECORD CITY

RECORD STATE

RECORD COUNTRY

RECORD ORGANIZATION

RECORD INDUSTRY

RECORD PRODUCT

RECORD SERVICE

RECORD TYPE

RECORD VALUE

RECORD WEIGHT

RECORD LENGTH

RECORD WIDTH

RECORD THICKNESS

RECORD DENSITY

RECORD TEMPERATURE

RECORD PRESSURE

RECORD VOLUME

RECORD SURFACE AREA

RECORD MASS

RECORD MOMENT

RECORD FORCE

RECORD ENERGY

RECORD POWER

RECORD EFFICIENCY

RECORD CAPACITY

RECORD SPEED

RECORD RATE

RECORD FREQUENCY

RECORD PERIOD

RECORD DURATION

RECORD INTERVAL

RECORD DELAY

RECORD LAG

RECORD LEAD

RECORD PHASE

RECORD AMPLITUDE

RECORD FREQUENCY

RECORD PERIOD

RECORD DURATION

RECORD INTERVAL

RECORD DELAY

RECORD LAG

RECORD LEAD

RECORD PHASE

RECORD AMPLITUDE

1ST AND 2ND COLUMNS										3RD AND 4TH COLUMNS									
PROCESSES AND PROPERTIES INDEX																			
<p><i>M</i></p> <p><i>23</i></p> <p><b>Dymov, A. M. <i>Works Methods of Metallurgical Analysis.</i> [In Russian.]</b>  <b>Pp. 120. 1933. Moscow and Leningrad: Gostkhimtechizdat. (Rbl. 2.)</b></p>																			
<p><b>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</b></p>																			
1ST COLUMN										2ND COLUMN									
1ST COLUMN										2ND COLUMN									



PROCESSES AND PROPERTIES INDEX

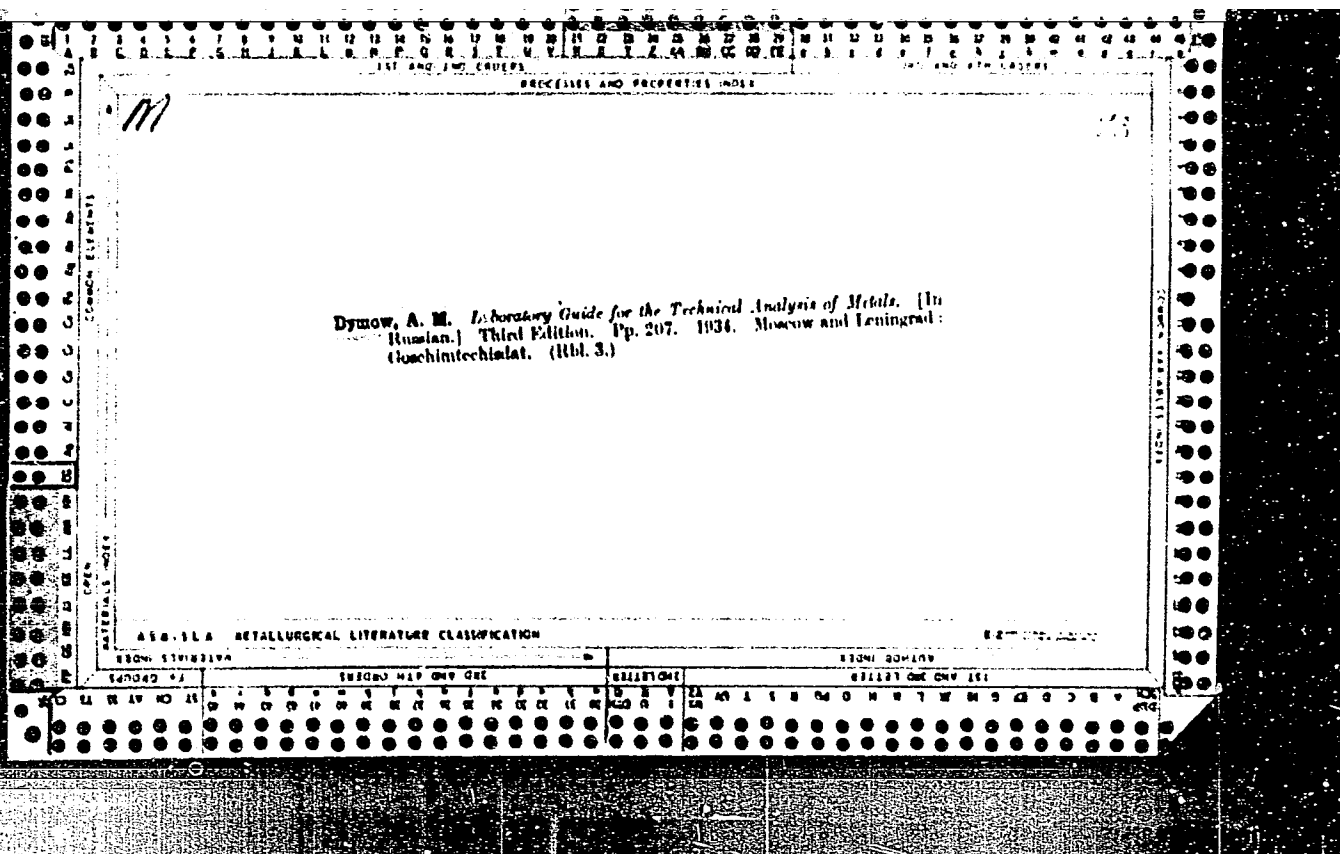
Use of liquid amalgams in the determination of vanadium in iron alloys. A. M. Dumov and O. A. Volodina. *Zavodsk. Lab.* 2, No. 9, 25-32 (1963). In the detection of V in Fe by the methods of Sumeyra (C. A. 17, 221), Nakamoto (C. A. 16, 1543) and Kano (C. A. 17, 247, 2483) Hg-Bi and Hg-Zn are used. V reduced by Hg-Zn to  $V^{++}$  is easily oxidized in the air; this makes it hard to obtain accurate values by titration with  $KMnO_4$ .

1 O. The advantage of the proposed modification of the method with the use of  $Ph_3NH$  as indicator is the use of only 1 amalgam (Hg-Bi) in the reduction of V and Fe with the elimination of the formation of blue solns.  $Ph_3NH$  is oxidized by  $KMnO_4$  with the formation of blue solns. only after the complete oxidation of  $Fe^{++}$  to  $Fe^{+++}$  and before the oxidation of  $V^{++}$ . A parallel titration with  $KMnO_4$  is made without  $Ph_3NH$  (oxidation of V and Fe) and with  $Ph_3NH$  (oxidation of Fe only), and the calcn. is made from the difference between the 2 values corresponding to the oxidation of  $V^{++}$  to  $V^{+++}$ . A correction of 0.1 cc. of 0.2 N  $KMnO_4$  consumed in the oxidation of  $Ph_3NH$  is introduced. The acidity of the titrated soln. is 10% HCl or  $H_2SO_4$  by vol. The addn. of 20 cc. of Zimmermann-Reinhardt mixt. prevents the yellow solns. of V and Fe from masking the end point of titration.

Chav. Blanc

Chay. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



67

Determination of titanium in cast iron, iron and steel  
 A. M. Duggan and O. A. Volodina. *Zashchita* 1953, 1083-74(1954). A comparative study of the proposed methods for the detn. of Ti in Fe products showed that of the 2 best procedures that of Cunningham (C. A. 27, 3272) is preferable to the method of Thornton (Z. anorg. Chem. 80, 407(1914)), because it gives equally accurate results but does not consume excessive time in filtering the large ppt. of FeS and evapn. of the voluminous filtrate. The cooling of the soln. to 0° before pptg. Ti with cupferron in the Thornton method is not necessary. C. R.

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1ST AND 2ND ORDERS

PROCESS AND PROPERTIES INDEX

180 AND 4TH ORDERS

9

\*Rapid Determination of Manganese in Bronzes. A. M. Duimov (Zavod. Lab. (Works' Lab.), 1938, 8, 664; C. Abs., 1938, 80, 7485).—[In Russian.] Dissolve 0.1–0.5 gm. of bronze in 8–12 gm. of conc.  $H_2SO_4$  and dilute with 100 c.c. water. Introduce 0.2–0.3 gm. of Al shavings for each 0.1 gm. of the sample and boil until all Cu is precipitated as a sponge and the solution becomes colourless. Filter and treat the filtrate with 5 c.c. of conc.  $HNO_3$ . 1–2 c.c.  $H_3PO_4$  (d 1.7), 10 c.c. of 0.8%  $AgNO_3$  solution, and 10 c.c. of 25%  $(NH_4)_2S_2O_8$  solution. Boil for 30 seconds, cool rapidly, add 20 c.c. of water, and titrate with  $As_2O_3$  solution to the disappearance of the rose colour. In the case of bronzes which dissolve with difficulty in  $H_2SO_4$  (e.g. those containing Pb), dissolve the sample in 4–7 c.c.  $HNO_3$  (d 1.2), add 8 gm. of  $H_2SO_4$ , evaporate to fumes, dilute with 100 c.c. of water, filter, and proceed as above. —N. B. V.

ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESS AND PROPERTIES INDEX

180 AND 4TH ORDERS

*Handwritten:* 100

**Determination of aluminum in steel.** A. M. Dymov and R. S. Mikhaylova. *Zhurnal Anal. Khim.* 1960, 35, 118-119. Dissolve 1-2 g. of steel in 50-60 ml. of 20%  $H_2SO_4$ . Oxidize with  $HNO_3$  and evaporate to strong fumes. Cool, dil. with 100 ml. of water, boil and filter. Treat the residue with  $HF + H_2SO_4$  to remove  $SiO_2$  and fuse with  $KHSO_4$ . Dissolve the melt in water and evaporate with  $H_2SO_4$  to ppt.  $WO_3$ . Dil., filter and add this filtrate to that originally obtained. Evap. to 75 ml., neutralize with  $Na_2CO_3$ , add 10-15 ml. of  $H_2SO_4$  and electrolyze with a cathode of Hg to remove Fe. Treat the electrolyzed soln. with  $(NH_4)_2S_2O_8$  to ppt.  $MnO$ , and det. Al by pptn. with 8-hydroxyquinoline.

R. C. A.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

Determination of titanium in stainless steels. A. M. Ilymov and O. A. Volodina. *Zavodskaya Lab.* 5, 1047-51 (1966); cf. C. A. 39, 28801. —Ti (V, Al, P) is sepd. from Cr, Ni, Fe, Co and Cu by electrolysis in weak  $H_2SO_4$  soln. with Hg cathode (cf. Cain, C. A. 3, 2701; Lundell, C. A. 17, 3464; Lundell, et al., Brophy, C. A. 18, 3158). Ti and V in the soln. are pptd. with cupferron. The ppt. is ignited and then fused with  $Na_2CO_3$ . The melt is treated with hot water, Ti is filtered off, and, after dissolving in 50% HCl, is pptd. with cupferron. V is detd. in the filtrate with the addn. of  $H_2SO_4$  and cupferron. Chas. Blanc

ASTM-SLA METALLURGICAL LITERATURE CLASSIFICATION

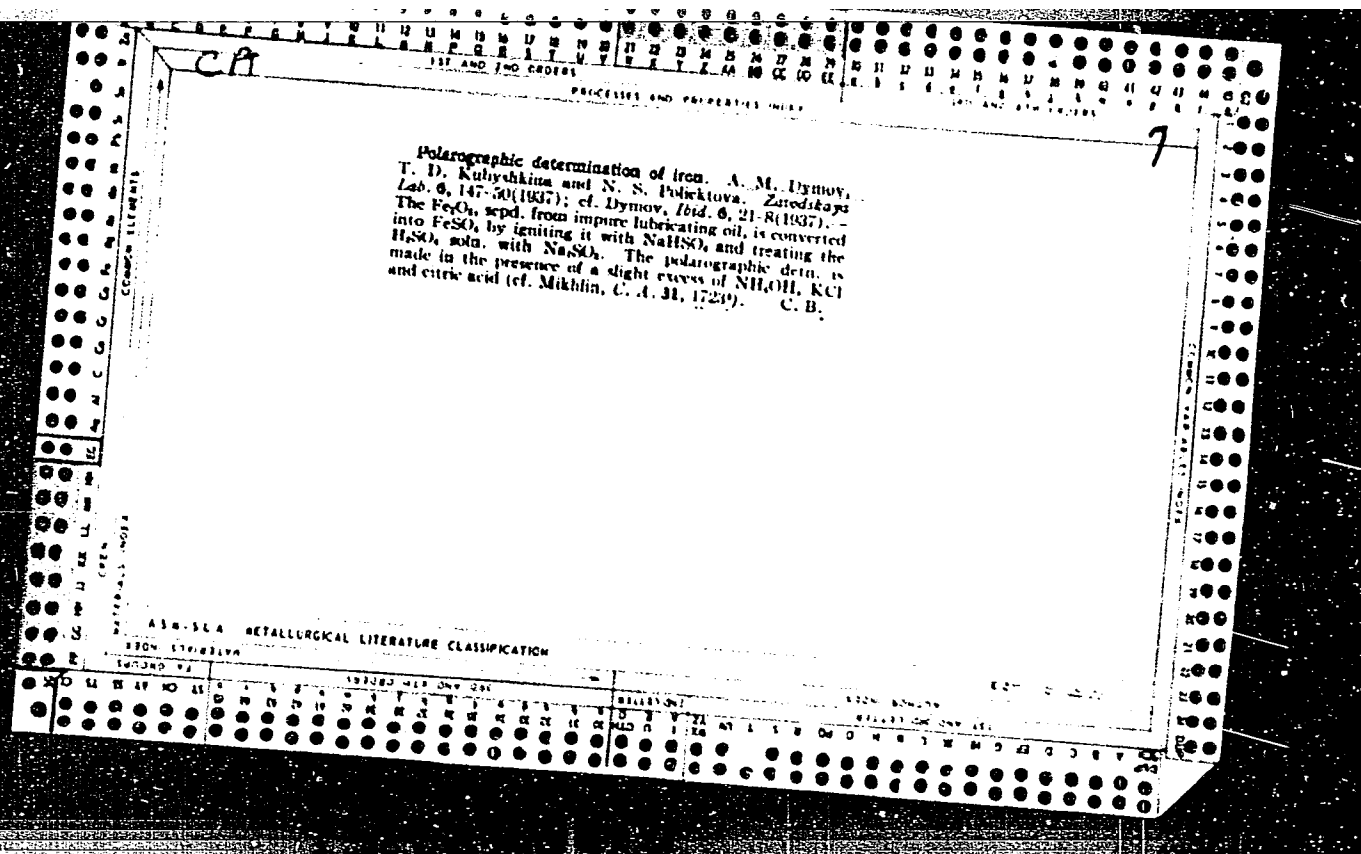
PROCESSES AND PROPERTIES INDEX

22

Methods for determining small quantities of iron in lubricating oils. A. M. Dymov. *Zavodskaya Lab.* 6, 21 8 (1937). Procedures for detg. Fe and oil and insol. Fe salts in motor oils are discussed. (1) A mixt. of 20 g. of used oil with 5 cc. of concd. HCl in 50 cc. benzene is refluxed on a water bath for 15-20 min. The mixt. is treated at the same temp. with H<sub>2</sub>S for 30 min. and then with excess NH<sub>4</sub>OH, and filtered. The FeS is washed with benzene and then with 2-3% NH<sub>4</sub>Cl soln., ignited and weighed as Fe<sub>2</sub>O<sub>3</sub>. (2) A mixt. of 20 g. oil, 0.5 cc. of concd. HNO<sub>3</sub>, 30 cc. of 50% HCl, 3 cc. benzene and 1 g. (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> is refluxed, with frequent shaking, at 50-55° for 40-60 min. After sepn. from the acid soln., the oil is again extd. with 40 cc. of 33% HCl and 2 cc. HNO<sub>3</sub>. Fe is detd. in the united acid extns. by the conventional gravimetric or colorimetric methods. The methods tested with prepul. mixts. of pure oil and Fe and Fe salts, with and without addn. of org. acids and CH<sub>3</sub>OH, are accurate to 0.0001 and 0.0002 g. for 0.1 and 0.2 g. Fe, resp.

Chas. Blum

ALSO SEE: METALLURGICAL LITERATURE CLASSIFICATION





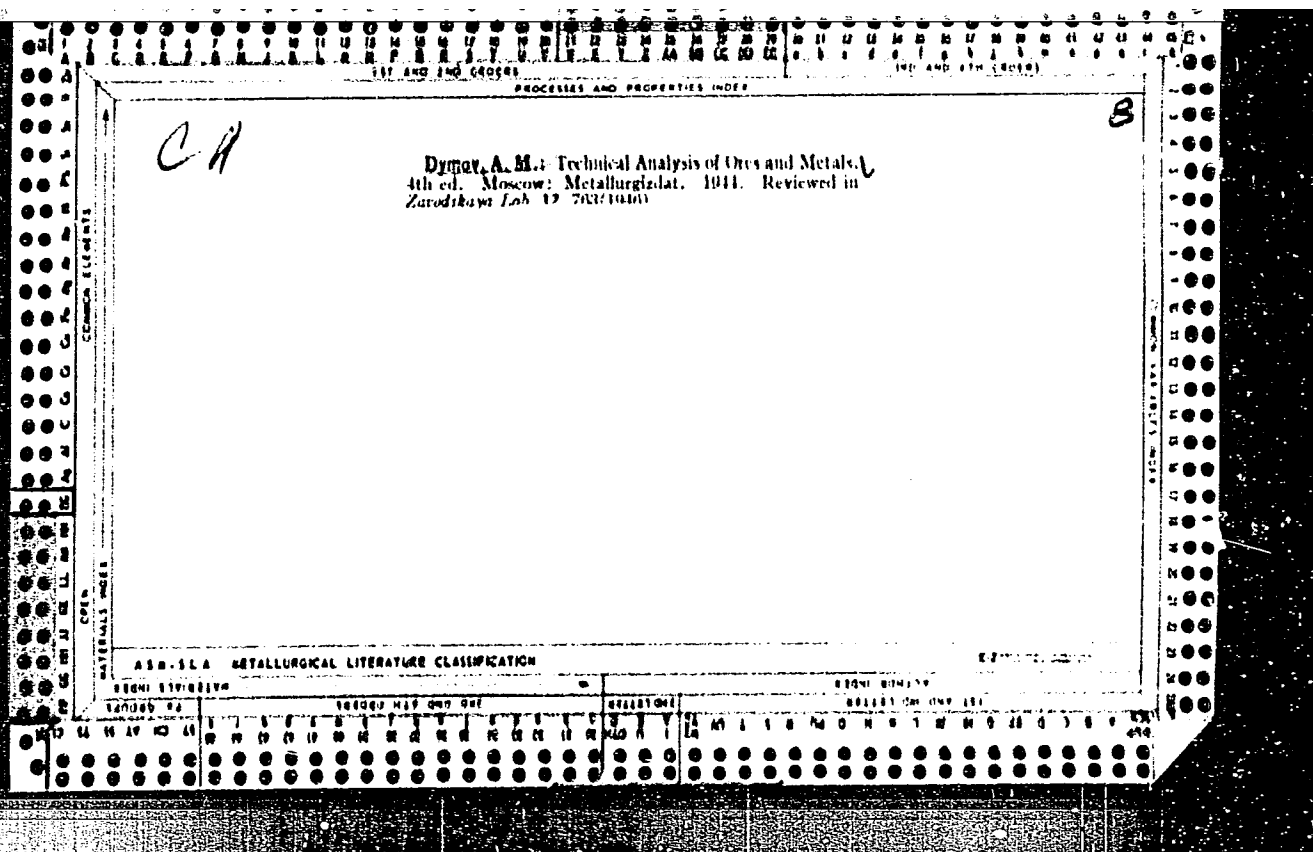
ca

— **Rapid analysis of ferrosilicon.**— A. M. Dymov, *Zavodskaya Lab.*, 6, 350 (60) 1357. A 0.3-g. sample of powd. Fe-Si (contg. a min. of 10% Si) can be decomposed in 30-45 min. by introducing it in small portions into 30-40 cc. of 15% NaOH (KOH) in a 250-ml. flask at 100-70°, continuing the heating for 10-15 min. After boiling for 2-3 min., any residue is dissolved in the subsequent treatment with HCl or H<sub>2</sub>SO<sub>4</sub>. The method cannot be used in the presence of P and As because of the formation of volatile PH<sub>3</sub> and AsH<sub>3</sub>. (Chas. Blane)

Chas. Blanc

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSING AND PROPERTY INDEX																									
<p><i>6H</i></p> <p><b>Determination of uranium in steels.</b> A. M. Dymov and R. S. Molchanova. <i>Zavodskaya Lab.</i> 7, 653-64 (1938).—Several detailed procedures are described for the gravimetric and volumetric detn. of U in various grades of steel based on the methods of Cain (C. A. 5, 2791) and Lundell, Hofman and Bright (C. I. 17, 3464). After the sepn. of Fe, Cr, Ni, Co, Cu and Mo by electrolysis of the <math>H_2SO_4</math> soln. with the Hg cathode in the Melavin app., the electrolyte besides U can contain Ti, V, Al and the bulk of Mn. Mn is removed as <math>MnO_2</math> by oxidation with <math>NH_4</math> persulfate, Ti and V are removed by pptn. with cupferron and Al as the sesquivalent U by pptn. with 8-hydroxyquinoline. The Al + U ppt. is fused with <math>KHSO_4</math> and U can be detd. in the soln. (1) by pptg. Al with excess <math>(NH_4)_2CO_3</math>, pptg. U in the filtrate with oxine in <math>AcOH</math> medium and igniting the ppt. at <math>1000^\circ</math> to <math>U_2O_5</math> and (2) by electrolyzing the soln. and titrating the quadrivalent U in the soln. with <math>KMnO_4</math> or <math>K_2Cr_2O_7</math>. In the absence of Ti, V and Al, Mn is removed from the electrolyte by oxidation with <math>NH_4</math> persulfate and pptn. with <math>Na_2C_2O_4</math>, the soln. is made acid with <math>H_2SO_4</math> and boiled to decom. persulfate and, after the electrolysis, the U is titrated as above.</p> <p style="text-align: right;"><i>7</i></p> <p style="text-align: right;">Chas. Blanc</p>																									
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									



13

Photocolorimetric Method for the Analysis of Iron Alloys. II. Determination of Nickel in Steel. A. M. Dymov and O. A. Volodina. 6 pages. Henry Brucher, Altadena, Calif. (Abstract Translation No. 3, 1948, p. 634-642.

Gives results of an experimental study of present colorimetric methods for nickel in metals and of the influence of third elements. Proposed procedures for nickel in steels containing up to 1% Ni, and also for those containing 1-6% Ni, are described.

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION

		A B C D E F G H I J K L M N O P Q R S T U V W X Y Z																											
		1ST AND 2ND CROSS													3RD AND 4TH CROSS														
		PROCESSES AND PROPERTIES INDEX																											
COMMON ELEMENTS CROSS REFERENCE INDEX		<p><b>B</b></p> <p style="text-align: right;"><b>15</b></p> <p>Rapid Semi-Micromethod for Calcium Oxide in Slags. A. M. Dymov and Ye. G. Rozhkova. 5 pages. From <i>Zarodskaya Laboratoriya</i>, v. 12, nos. 7 and 8, 1946, p. 643-665. Henry Bratcher, Altadena, Calif. (Par- tial translation No. 1930.)</p> <p>Method described is based on precipitation of cal- cium oxalate. Procedures with and without cen- trifuging are described.</p>																											
MATERIALS INDEX	COPY	ASM-AIA METALLURGICAL LITERATURE CLASSIFICATION																											
HIGH TEMPERATURE		HIGHER DIV ONE SET														SELECTIONS													
(INDEX)		(DIVISION OF THE AMERICAN SOCIETY FOR METALS)														(PUBLISHED BY THE AMERICAN SOCIETY FOR METALS)													

PROCESS AND PROPERTIES INDEX	
7	<p>Photocolorimetric methods for the analysis of iron alloys. III. Determination of cobalt in steel. A. M. Ilyinoy and O. A. Vokulina (Stalin Steel Inst., Moscow) <i>Zavodskaya Lab.</i> 13, 137-141 (1947); cf. C. I. 41, 1171r.</p> <p>For the photoelec. colorimetric detn. of Co by a method similar to that of E. G. Jones (C. I. 13, 15) the reagent is 0.1 g. <math>\alpha</math>-nitroso <math>\beta</math>-naphthol plus 10 ml. of 5% KOH or NaOH per l. For steels contg. (a) less than 1% of Co, and (b) between 1 and 5% of Co, dissolve 0.1 g. sample, and dil. to 100 or 200 ml., resp. For (a) use 10 ml. of soln., for (b) 5 ml.; add 10 or 5 ml., resp., of 20% Rochelle salt soln. to prevent pptn. of Fe, then 10 or 5 ml., resp., of 5% KOH soln., and, in either case, make up to 100 ml. Max. intensity of color is produced by 15-20 ml. of reagent per 100 ml. of soln. independently of the quantity of Co present. Sensitivity is increased by using a blue light filter. Cr up to 14%, W up to 17.7%, and Ni up to 1% do not interfere; greater quantities than 1% of Ni intensify the color. Construct 2 calibration curves (one for Co &lt; 1%, one for Co 1-5%) based on galvanometer deflections. Up to 5% of Co, the values found do not deviate more than 0.2% from results obtained by the Hunsky-Knorre gravimetric method. E. H.</p>
<p>ASO-51A METALLURGICAL LITERATURE CLASSIFICATION</p>	

5

Prerequisites for the Accurate Determination of Hydrogen (in Metals). A. M. Dymov. (Zavodskaya Laboratoriya, 1947, vol. 13, pp. 292-293; Chemical Abstracts, 1948, vol. 42, May 20, col. 3283). In establishing a satisfactory method for determining hydrogen in metals, it is necessary to consider: (a) Progress of smelting before the sample is taken, (b) dimensions and form of the mould which will result in most uniform cooling for the given grade of steel ingot, (c) sections of the ingot to be sampled, (d) form and dimensions of the sample, and (e) preparation of the sample for analysis. A comparative study should be made of the best methods of determining hydrogen for various groups of steels and not for steels in general. Consideration should be given to the physicochemical properties of the steels as they affect the gas to be determined.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

62-11111

137 AND 138 CODES										140 AND 141 CODES									
PROCESSES AND PROPERTIES INDEX																			
										21									
<p>5 AN IMPROVED APPARATUS FOR THE EXTRACTION OF IRON BY ETHER. A. M. Dynov.            (Zavodskaya Laboratoriya, 1948, vol. 14, Aug., pp. 995-997). (In Russian).            An apparatus for the continuous ethereal extraction of iron from solutions of            various ferrous alloys, and its method of operation, are described. S.K.</p>																			
<p>137-138 METALLURGICAL LITERATURE CLASSIFICATION</p>																			
137-138										140-141									
137-138										140-141									



DYMOV, Prof. Dr. A. M.

PA 3/49T8

USSR/Chemistry - Laboratories, Analytical Aug 48  
Chemistry - Analysis

"Progressive Standards - Fundamental Indication of  
the Work of a Laboratory," Prof Dr A. M. Dymov,  
Lab of Tech Anal, Moscow Steel Inst Imeni I. V.  
Stalin, 3½ pp

"Zavod Lab" Vol XIV, No 8

Reviews progress made in analysis during past  
10 years. Urges more widespread use of photoelectric  
and polarographic methods. Only by trained men with  
correct equipment can average progressive norms be  
attained.

3/49T8

PA 16/49T17

DYMOV, A. M.

USSR/Chemistry - Concentration (the  
Condition)

Sep 48

Chemistry - Reagents, in Fixanals

"Necessity for Increasing the Use of Fixanals,"  
A. M. Dymov,  $\frac{1}{2}$  p

"Zavod Lab" Vol XIV, No 9

"Fixanals" are glass ampoules containing a known proportion of the equivalent weight of a reagent. They facilitate preparation of titration solutions, etc. However, normal solutions are rarely used in factory laboratories, empirical concentration solutions being used instead. Suggests production of special empirical concentration fixanals.

16/49T17

DYMOV, A. M.

PA 16/49T16

USSR/Chemistry - Analysis, Labo-  
ratories for  
Chemistry - Condensers

Sep 48

"A New Air Condenser," A. M. Dymov, Steel Inst  
imeni I. V. Stalin,  $\frac{1}{2}$  p

"Zavod Lab" Vol XIV, No 9

Certain analyses and syntheses involve use of air  
condenser, usually consisting of glass tube 4 - 6  
mm in diameter and 75 - 100 cm long. Describes im-  
proved version, giving sketch. It consists essen-  
tially of glass tube 45 cm long with four spherical  
dilations 30 mm in diameter.

16/49T16

DYMOV, A. M.

MIC.  
Miso.  
.1131A

Tekhnicheskii analiz rud i metallov (Technical analysis of ores and metals)  
Moskva, Mashgiz, 1949.  
483 p. illus.

Polarographic analysis in ferrous metallurgy. V. P.  
Nikolshtein and A. M. Dyrgov. *Trudy Khimich. Inst.*  
*Khim., Otdel. Khim. Nauk. Akad. Nauk S.S.S.R.* 2.  
(3), 157-81 (1972). --Review with 25 references. M. 110-6.



PA 163T50

DYMOV, A. M.

USSR/Metals - Austenite  
Chemistry - Analysis

Jun 50

"Method for Chemical Separation of Iron Niobide  
From Austenitic Steel," A. M. Dymov, S. S. Gore-  
lik, Moscow Inst of Steel Imeni I. V. Stalin

"Zavod Lab" Vol XVI, No 6, pp 648-650

Suggests method developed using chrome-nickel-  
molybdenum austenitic steel with niobium content  
16-20 times greater than carbon content. Such  
steels, according to technical literature, con-  
sist of two phases: austenite and niobium carbide.  
Establishes by thermal coloring etching the

163T50

USSR/Metals - Austenite  
(Contd)

Jun 50

presence of third phase. Describes procedure for  
identification of unknown phase as iron niobide  
and method for its separation. Method may be used  
only for qualitative determination.

163T50

*Dymov, A. M.*  
BUYANOV, N.V., kandidat tekhnicheskikh nauk, redaktor; GENEBOZOV, B.A.,  
redaktor; DYMOV, A.M., professor, doktor, retsenzent; TROITSKAYA,  
M.I., kandidat tekhnicheskikh nauk, retsenzent; STARODUBTSEVA, S.N.  
redaktor.

[Modern methods of analysis in metallurgy] Sovremennye metody  
analiza v metallurgii, Moskva, Gos.nauchno-tekhn.izd-vo lit-ry  
po chernoi i tsvetnoi metallurgii, 1955 222 p. (MLRA 9:1)  
(Metallurgical analysis)



DYMOV, A. M. (Prof.)(Dr. Chem. Sci.); MOLCHANOVA, R. S.

"The Determination of Phosphorus in Ferrotitanium," in book The Application of Radioisotopes in Metallurgy, Symposium XXXIV; Moscow; State Publishing House for Literature on Ferrous and Nonferrous Metallurgy, 1955.

Prof. A. M. DYMOV, Dr. Chem. Sci.; R. S. Molchanova, Assistant/ Chair of Analytical Chemistry, Moscow Inst. of Steel im I. V. Stalin.

DYMOV, A. M. (Prof.) (Dr. Chem. Sci.); MOLCHANOVA, R. S.;

"The Determination of Phosphorus in Ferroniobium," in book The Application of Radioisotopes in Metallurgy, Symposium XXXIV; Moscow; State Publishing House for Literature on Ferrous and Nonferrous Metallurgy, 1955.

Prof. A. M. Dymov, Dr. Chem. Sci.; R. S. Molchanova, Assistant, Chair of Analytical Chemistry, Moscow Inst. of Steel in I. V. Stalin.

DYMOV, A.M., professor, doktor khimicheskikh nauk; MOLCHANOVA, R.S., assistant.

Determining phosphorus in ferreniobium. Sber.Inst. stal 34:306-319 '55.  
(MLBA 9:7)

1. Kafedra analiticheskoy khimii.  
(Phosphorus--Isotopes) (Iron-niobium alloys)



BABKO, Anatoliy Kirillovich; PYATNITSKIY, Igor' Vladimirovich; ALIMARIN, I.P.,  
redaktor; DYMOV, A.M., professor, redaktor; LUR'YE, Yu.Yu., professor,  
redaktor; FILIPPOVA, N.A., redaktor; LUR'YE, M.S., tekhnicheskii  
redaktor

[Quantitative analysis] Kolichestvennyi analiz. Moskva, Gos. nauchno-  
tekhn. izd-vo khim. lit-ry, 1956. 736 p. (MLRA 9:11)

1. Chlen-korrespondent AN SSSR (for Alimarin)  
(Chemistry, Analytical--Quantitative)

*Dymov, A.M.*

137-58-5-11136

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 319 (USSR)

AUTHORS: Dymov, A.M., Shchelkunova, A.N.

TITLE: The Employment of the Colorimetric Method in the Analysis of Iron Alloys (Kolorimetricheskiy metod v primenenii k analizu zheleznykh splavov)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii. Ukr. resp. pravl., 1956. Vol 4. pp 32-37. Comments, p 38

ABSTRACT: The method, developed for the determination of small amounts of Mg in cast iron, is based on the formation of Mg hydroxy-quinolate followed by colorimetric analysis. A weighed portion of cast iron is dissolved in 50 cc of HCl (1:1). After oxidizing the solution with 2-3 cc of HNO<sub>3</sub> (specific gravity of 1.4) and evaporating it to dryness, HCl is added, and the resulting solution is boiled. After filtering out the precipitate, the filtrate is evaporated to dryness and the dry residue is treated with HCl. the basic amount of Fe is extracted with the aid of amylacetate. In order to remove the Fe entirely, 10 cc of 3% H<sub>2</sub>O<sub>2</sub> are added together with an excess of a 25% solution of NH<sub>4</sub>OH; the solution is heated for 15-20 minutes in a bath and is then filtered out. The

Card 1/2

137-58-5-11136

The Employment of the Colorimetric Method in the Analysis of Iron Alloys

combined filtrates are evaporated to dryness and heated in order to remove the ammonium salts. After treating the dry residue with  $H_2O$ , to which 3 - 5 drops of 2-N  $H_2SO_4$  have been added, the  $MnO_2$  which has separated out is filtered off. The Mg in the filtrate is precipitated by the action of a 2% alcohol solution of hydroxyquinoline in the presence of NaOH and sodium tartrate. The residue is dissolved in 0.1-N  $CH_3COOH$  and is analyzed colorimetrically. Another approach is also recommended: the solution, freed of Fe and other elements, is diluted to 100 cc; bromthymol blue is added and the solution is neutralized with a 2-N  $NH_4OH$  solution; Mg and Fe are then precipitated with the aid of a 2% alcohol solution of hydroxyquinoline. The Mg hydroxyquinolate of the filtrate is precipitated in an alkaline medium in the presence of tartrate. The precipitate is dissolved in 0.1-N solution of  $CH_3COOH$  and the Mg is analyzed colorimetrically. The relative error amounts to 1.5-3.5%. See also RzhMet, 1957, Nr 7, abstract 13656.

1. Iron alloys--Analysis    2. Colorimetry--Applications

Yu. B.

Card 2/2

DYMOV, A.M., professor, doktor khimicheskikh nauk; SHCHELKUNOVA, A.N.,  
assistant.

Colorimetric method for the analysis of iron alloys. Sbor. Inst.  
stall no.35:417-432 '56. (MLRA 10:8)

1. Kafedra analiticheskoy khimii.  
(Iron alloys--analysis) (Colorimetry)



Dymov, A. M.

AUTHORS: Dymov, A. M., Yel'yanov, A. A., Klyachko, Yu. A., Lur'ye,  
Yu. Yu., Troitskaya, M. V., and Chernikhov, Yu. A.

TITLE: Solomon Yul'yevich Faynberg (Solomon Yul'yevich Faynberg)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, No. 1, p. 128

ABSTRACT: On the occasion of the 80th birthday of the scientist, Fayn-  
berg, the above authors recount some of his achievements.  
Since 1951 he has been the head of the GINTSVETMET (State Insti-  
tute of Non-ferrous Metals), and wrote the book, "Analysis of  
the Ores of Non-ferrous Metals."

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 1/1

AUTHOR: Dymov, A. M., Professor, Doctor of Chemical Sciences 32-lo-8/32

TITLE: Comments

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 10, pp 1175-1175 (USSR)

ABSTRACT: In his report on the occasion of the 40th anniversary of the October revolution, the author declares to be in a position to state a tremendous progress in analytical chemistry in the USSR in recent times. This concerns especially the fields of organic reagents many of which were proposed for the first time by Soviet analysts, complex compounds, analysis by volume, extraction processes of the separation and concentration of elements and their compounds. The adsorption-chromatographical method of the Russian botanist M. S. Tsvetov, was extensively developed in this connection; completed by the ion-exchange process, this method became very much in demand both by analysts and technologists whom it enables to carry out the most accurate processes of analysis of separation, purification, etc. Especial importance should be attached to the application of radioactive isotopes which lead to the solution of many important questions in analytic chemistry and in detail for the elaboration of highly sensitive methods of analysis in the research of the solubility of the deposit, co-precipitation processes, separation processes, among

Card 1/2

Comments

32-10-8/32

which ranges extraction and chromatography. Good results were obtained among others also with the treatment of micro samples by the application of isotopes.

According to the statements of the author, important progress was achieved in the field of laboratory technics in the USSR, especially in the construction of new outfits for micro-and ultra-micro-analysis, manipulators for test works at range which is of great importance with the use of radioactive substances, etc. - The great progress in the field of technical analysis lead to the equalization of this field with the field of the so-called classical analysis by carrying out the most accurate determinations and test processes within the scope of daily inspection work in the plants, or works-laboratories respectively, as e.g. the determination of micro-component in pure metals up to ten thousandths parts of a %.

ASSOCIATION: Moscow Steel Institute imeni  
stali imeni I. V. Stalina)

I. V. Stalin (Moskovskiy institut

AVAILABLE: Library of Congress

1. Chemistry-USSR-Progress

Card 2/2

DYMOV, A.M.

AUTHOR: Dymov, A.M., Professor, Head Soviet Delegation of 32-12-68/71  
Analysts at the 1st and 2nd Conferences of ISO

TITLE: Study and Approval of International Standards of  
Analysis Methods (O razrabotke i utverzhdenii mezhdunarodnykh  
standartov na metody analiza).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1523-1524 (USSR)

ABSTRACT: The author gives a report on the attendance of the Soviet delegation  
at meetings of the International Organization for Standards (ISO).  
As the USSR possesses the largest manganese occurrences of the world,  
it was requested by the said organization to work out the project  
for the methods of determining the components of manganese ores. In  
the course of two sessions of this organization, which took place at  
Leningrad in November 1954 and August 1956, the Soviet delegation,  
under the leadership of the author, submitted a total of 14 of such  
projects, which were accepted and passed by the meeting with some  
improvements and additions. During the second of these sessions the  
Soviet delegation received the offer to work out further 8 projects  
of methods. The order has already been executed and the elaborated  
projects have been sent to the member countries after being trans-  
lated into the French and English languages. It is intended that

Card 1/2

Study and Approval of International  
Standards of Analysis Methods

32-12-68/71

these projects will be dealt with at the next session of this organization, which will take place within short at Moscow. The projects contain mainly the latest accelerated methods of determination in the case of manganese ores under transport conditions, viz. with respect to manganese dioxide (with titration), phosphorus (with application of "blue salt" or colorimetrically), as well as according to photocolometric analysis of the content of: nickel, cobalt, lead and zinc, copper, arsenic, vanadium, and metallic iron. The members of the Soviet delegation suggested that, in the case of manganese transports, average quality analyses be introduced. In conclusion the author expresses his appreciation of the "friendly and objective" reception accorded by his foreign colleagues to the members of the Soviet delegation during the above mentioned conferences of the ISO organization.

AVAILABLE: Library of Congress

Card 2/2 1. Manganese ores-Standards

*DYMOV, A.M.*  
SVECHNIKOV, V.N., akademik; STARODUBOV, K.F., akademik; *DYMOV, A.M.*, prof.;  
YEL'YANOV, A.A.; CHERNIKHOV, Yu.A., prof.; SHCHAPOV, N.P., prof.;  
BLATNER, M.Ye., prof.

Lev Samuilovich Dlugach; obituary. Zav. lab. 23 no.12:1527-1528 '57.  
(MIRA 11:2)

1. AN USSR (for Svechnikov, Starodubov).  
(Dlugach, Lev Samuilovich, 1887-1957)

AUTHORS: Dymov, A. M., Koreneva, V. V.

SOV/163-58-3-46/49

TITLE: The Extraction of Iron (III) From Hydrochloric Solutions With Tribenzylamine in Chloroform (Ekstraktsiya zheleza (III) iz solyanokislykh rastvorov tribenzilaminom v khloroforme)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 269-272 (USSR)

ABSTRACT: The optimum conditions for this extraction were investigated. The extent of the extraction of iron (III) from hydrochloric solutions as dependent on the concentration of the hydrochloric acid and the concentration of the tribenzylamine in chloroform, the concentration of the iron in the initial solution, the duration of the extraction, the number of subsequent extractions, and the ratio between the organic and the aqueous phase were investigated. An 8% tribenzylamine solution was used as extracting agent. The results obtained show that the extraction of iron (III) from hydrochloric solutions depends to a high degree on the concentration of the hydrochloric acid in the solution. The complete extraction was obtained with 8n HCl. A further increase of the concentration of hydrochloric acid did not result

Card 1/2

SOV/163-58-3-46/49

The Extraction of Iron (III) From Hydrochloric Solutions With Tribenzylamine in Chloroform

in a percentual increase of the extraction.

The extraction of iron from concentrated hydrochloric acid is explained by the occurrence of some complex groups:

$[\text{FeCl}^{2+}]$ ;  $[\text{FeCl}_2]^+$ ;  $\text{FeCl}_3$ ;  $[\text{FeCl}_4]^-$  and others.

A complete extraction from an 8n HCl-solution is obtained by means of an 8% chloroform solution of tribenzylamine.

A complete extraction is obtained at a content of 2,02 mg/ml - 40,40 mg/ml Fe. Larger quantities of iron are not completely extracted.

The equilibrium between the aqueous and the organic phase is obtained within 2-3 minutes. If the ratio between organic phase and aqueous phase is 1:1 the iron is completely extracted. There are 3 figures, 2 tables, and 7 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: December 6, 1957  
Card 2/2



DYMOV, A.M., prof., doktor khim.nauk

Scientific and technical examination of the quality of industrial materials. Standartizatsiia 22 no.5:23-24 S-O '58.  
(MIRA 11:11)

1. Moskovskiy institut stali imeni I.V. Stalina.  
(Quality control)

DYMOV, A.M., prof.; LUR'YE, Yu.Yu.; ALIMARIN, I.P.; FHYGEL', L.V.

Vladimir Nikolaevich Alekseev; obituary. Zav.lab. 24 no.4:512  
'58. (MIRA 11:4)

1. Chlen-korrespondent AN SSSR (for Alimarin). 2. Sotrudniki kafedry  
analiticheskoy khimii Moskovskogo instituta stali.  
(Alekseev, Vladimir Nikolaevich 1888-1958)

50)

AUTHORS: Vinogradov, A. P., Alimarin, I. P., SOV/32-25-2-78/78  
Tananayev, I. V., Dymov, A. M., Terent'yev, A. P.,  
Lur'ye, Yu. Yu., Chernikhov, Yu. A., Koronman, I. M.,  
Kuznetsov, V. I., Gel'man, N. E., Klimova, V. A.,  
Sheveleva, M. S., Chumachenko, M. N., Terent'yeva, Ye. A.  
and others

TITLE: Mirra Osipovna Korshun (Mirra Osipovna Korshun)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, p 255 (USSR)

ABSTRACT: Mirra Osipovna Korshun, one of the leading scientists in the field of the microanalysis of organic compounds, died on December 1, 1958. The deceased graduated in 1929 from the II MCU where she had studied chemistry. In 1933 she became head of the analytical group. From 1935 onward she was Head of the Laboratory for Microanalyses at the Institut organicheskoy khimii (Institute of Organic Chemistry) and, in recent years at the Institut elementoorganicheskikh soedineniy AN SSSR (Institute of Elemental-Organic Compounds, AS USSR). Moreover, she was a Member of the Komissiya po analiticheskoy khimii pri Prezidiume AN SSSR (Commission for Analytical Chemistry)

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Mirra Osipovna Korshun

SOV/32-25-2-78/78

With the Presidium of the AS USSR). In 1958 she was appointed Member of the Komitet po mikrokhimicheskim metodam Mezhdunarodnogo soyuza po chistoy i prikladnoy khimii (Committee on Micro-Chemical Methods of the International Association for Pure and Applied Chemistry). M. O. Korshun introduced into organic analysis the principle of "pyrolytic combustion" in the empty tube which makes it possible to determine simultaneously several elements contained in one weighed portion of complicated organic compounds. The school of organic microanalysis founded by the deceased is still being further developed in the USSR in the spirit of her work.

Card 2/2

USCOMM-DC-60750



DYMOV, A.M., prof., doktor khim. nauk

[Technical analysis of rocks, slags, and metals checking the chemical composition of materials used in metallurgy]; laboratory manual] Tekhnicheskii analiz rud, shlakov i metallov (kontrol' khimicheskogo sostava materialov metallurgicheskogo proizvodstva); laboratornoe rukovodstvo. Moskva, Mosk. in-t stali im. I.V.Stalina. No.1. [Analysis of iron and manganese ores; determination of the general iron and manganese content] Analiz zheleznykh i margantsevykh rud; opredelenie obshchego soderzhaniia zheleza i margantsa. 1960.

44 p.

(MIRA 14:10)

(Iron ores--Analysis)

(Manganese ores---Analysis)

S/148/61/000/011/016/018  
E021/E435

AUTHORS: Dymov, A.M., Kozel', L.Z.

TITLE: The determination of small quantities of aluminium in metallic titanium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.11, 1961, 182-184

TEXT: Three methods of determining aluminium (0.002 to 0.1%) in titanium were tried. In the first method, the titanium was separated from the aluminium by precipitation with sodium hydroxide and the aluminium was finally determined colorimetrically. Experiments showed that the results gave considerably higher results than the quantities added. The second method consisted of separating the titanium from the aluminium by precipitating the titanium with cupferron and the extraction of titanium cupferronate by chloroform. The final determination was again carried out colorimetrically; the results were also somewhat higher than the aluminium added. Further experiments showed that boiling with hydrochloric acid enabled complete decomposition of the cupferron and a colourless solution could be obtained. The results obtained  
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The determination of small ...

S/148/61/000/011/016/018  
E021/E435

were much better. The third method, used for determining Al contents of 0.05 to 0.4%, consisted of separating the titanium from the aluminium by cupferron with filtration of the titanium cupferronate precipitate without any extraction process. This method also gave good results when the cupferron was decomposed by boiling with hydrochloric acid. There are 4 tables and 6 non-Soviet-bloc references: the four most recent references to English language publications read as follows:  
Ref.1: J.A. Corbet. Metallurgia, 49, 1954, 206;  
Ref.3: Republic Steel Corp., Massillon. Ohio, 1954, 56-9;  
Ref.4: M. Codell and Norwitz. Anal. Chem. 25 (1953) 1437;  
Ref.6: J.J. Mikula and M. Codell. Anal. Chem., 27, 1955, 729.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: November 14, 1960

Card 2/2



YAKOVLEV, Pavel Yakovlevich, kand. khim. nauk; FEDOROV, Aleksey Alekseyevich, inzh.; BUYANOV, Nikolay Vasil'yevich, kand. tekhn. nauk; DYMOV, A.M., dokt. khim. nauk, prof., retsenzent; SHEMYAKIN, F.M., dokt., khim. nauk, prof., retsenzent; KHARLAMOV, I.P., kand. tekhn. nauk, retsenzent; VENETSKIY, S.I., red. izd-va; KLEYNMAN, M.R., tekhn. red.

[Analysis of data on metallurgical production; determination of microimpurities] Analiz materialov metallurgicheskogo proizvodstva; opredelenie mikroprimesei. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 316 p. (MIRA 14:7)  
(Metals—Analysis)

ALIMARIN, I.P.; BILIMOVICH, G.N.; BUSEV, A.I.; VAYNSHTEYN, E.Ye.; VOLYNETS, M.P.; GORYUSHINA, V.G.; DYMOV, A.M.; YELINSON, S.V.; ZVIAGINTSEV, O.Ye.; KOLOSOVA, G.M.; KORCHEMNAYA, Ye.K.; LEBEDEV, V.I.; MALOFEYEVA, G.A.; MELENT'YEV, B.N.; NAZARENKO, V.A.; NAZARENKO, I.I.; PETROVA, T.V.; POLUEKTOV, N.S.; PONOMAREV, A.I.; RYABUKHIN, V.A.; STROGANOVA, N.S.; CHERNIKHOV, Yu.A.; VINOGRADOV, A.P., akademik, otv. red.; RYABCHIKOV, D.I., doktor khim. nauk, prof., otv. red.; GUS'KOVA, O., tekhn. red.

[Methods for the determination and analysis of rare elements] Metody opredeleniya i analiza redkikh elementov. Moskva, 1961. 667 p.

(MIRA 14:7)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii.  
(Metals, Rare and minor)

DYMOV, A.M.

"Analytical chemistry of thorium" by D.I. Riabchikov, E.K. Gol'braikh.  
Reviewed by A.M. Dymov. Zhur. anal. khim. 16 no. 4:510-511 J1-Ag '61.

(MIRA 14:7)

(Thorium—Analysis) (Riabchikov, D.I.) (Gol'braikh, E.K.)

LYMOV, A.M.; KOZEL', L.Z.

Determination of ~~small~~ amounts of aluminum in titanium metal.  
Izv. vys. ucheb. zav.; chern. met. 4 no.11:182-184 '61. (MIRA 14:12)

1. Moskovskiy institut stali.

(Aluminum--Analysis)

(Titanium--Analysis)

DYMOV, A.M., prof.

Conference of the Technical Committee on the methods of  
analysis and assaying of manganese ores. Zav.lab. 28  
no.6:764-765 '62. (MIRA 15:5)  
(Manganese ores--Sampling and estimation)

DYMOV, A.M.

Modulovskiy, A.M. (1963) 10:10

New scale and table of atomic weights. Zav. lab. 29 no.10:  
1275-1276 '63. (MIRA 16:12)

1. Moskovskiy institut stali i splavov.

STEPIN, Vasil'y Vasil'yevich; SILAYEVA, Yelizaveta Vasil'yevna;  
PLISS, Anastasiya Mikhaylovna; KURBATOVA, Vera Ivanovna;  
KRYUCHKOVA, Lidiya Merkur'yevna; PONOSOV, Vladimir Il'ich;  
DYMOV, A.M., doktor khim. nauk, prof., red.; FEDOROV, A.A.,  
st. nauchn. sotr., red.; TKACHENKO, N.S., inzh., red.;  
DOBRZHANSKIY, A.V., st. inzh., red.; LEVIT, Ye.I., red. izd-  
va; ISLENT'YEVA, P.G., tekhn. red.

[Analysis of ferrous metals, alloys and manganese ores] Ana-  
liz chernykh metallov, splavov i margantsevykh rud. [By] V.V.  
Stepin i dr. Moskva, Metallurgizdat, 1964. 498 p.

(MIRA 17:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii (for Dymov, Fedorov, Tkachenko, Dobrzhanskiy).

DYMOV, Aleksandr Maksimovich

[Technical analysis (control of the chemical composition of iron alloys); methods for determining the element content] Tekhnicheskii analiz (kontrol' khimicheskogo sostava zheleznykh splavov); metody opredeleniia sodержaniia elementov. Moskva, Metallurgii, 1964. 335p. (MIRA 17:12)

1. Moskovskiy institut stali i splavov, kafedra Analiticheskoy khimii.



DYMOV, A.M., prof.

Modern quipment for chemical laboratories. Zav. lab. 30 no.7:  
897 '64. (MIRA 18:3)

1. Moskovskiy institut stali i splavov.

GROMAKOVA, Z.I.; BUKETOVA, Ye.A.; MAKHMETOV, M.Zh.; DYMOV, A.M.

Determination of tellurium forms in copper electrolytic slimes.  
Zhur. anal. khim. 20 no.12:1364-1367 '65. (MIRA 18:12)

1. Khimiko-metallurgicheskiy institut AN KazSSR, Karaganda.  
Submitted October 27, 1964.

L 24428-66 EWT(m)/EWP(t)/EWP(k) IJP(c) JD/JH  
ACC NR: AT6006482 SOURCE CODE: UR/2680/65/003/024/0284/0297

AUTHORS: Goderzian, K. K.; Dymov, V. N. 37  
B11

ORG: State Scientific Research and Design Institute of Alloys and Nonferrous Metalworking, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov)

TITLE: Basic technological parameters in the manufacture of high purity aluminum wire 18 27

SOURCE: Moscow. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov. Trudy, no. 24, 1965. Metallovedeniye i obrabotka tsvetnykh metallov i splavov (Metal science and the treatment of non-ferrous metals and alloys), 284-297

TOPIC TAGS: aluminum, <sup>lubricant</sup> ~~metal~~, metal test, metallurgic process, wire, fine wire, wire product/ Alyudro 6 lubricant

ABSTRACT: This investigation was conducted to determine the basic conditions for the manufacture of high purity aluminum wire used in construction of silicon diodes. The effect of different drawing speeds, temperature, drawing dyes, and drawing

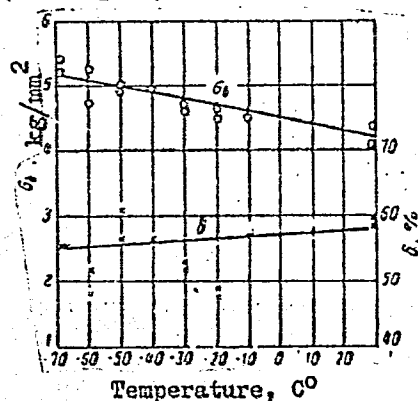
Card 1/3 2

L 24428-66

ACC NR: AT6006482

lubricants on the purity and strength properties of ultra-pure aluminum wire was determined. The initial purity of the metal was in the region of 99.996 to 99.99987%. Microphotographs of wire specimens are presented. The experimental results are shown in graphs and tables (see Fig. 1).

Fig. 1. Influence of low temperatures on the mechanical properties of zone-refined aluminum.  $\sigma_b$  strength limit,  $\delta$  plasticity coefficient.



It was found that wire of 0.1 to 0.08 mm in diameter may be obtained from 99.9992% pure aluminum without any difficulty. But obtaining wire of higher purity required

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ACC NR: AT6006482

low drawing temperatures (-60 to -70C) and drawing speeds on the order of 30--40 m/sec in order to prevent recrystallization of the metal. The plasticity of the wire was found to increase and its strength to decrease with increase in the purity of the aluminum. The use of diamond dyes and appropriate dye lubricants (the lubricant "Alyudro 6, specimen 1" was found to be the most suitable of the ten lubricants tested) insures the retention of the initial high purity of the metal in the wire. Orig. art. has: 1 table and 6 graphs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 009

Card 3/30<sup>60</sup>

L 02357-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HN/JH

ACC NR: AR6028432 SOURCE CODE: UR/0137/66/000/005/D060/D060 34

AUTHOR: Goderzlan, K. K.; Dymov, V. N. 18 27 B

TITLE: Basic parameters of wire protection from high-purity aluminum

SOURCE: Ref. zh. Metallurgiya, Abs. 5D412 1

REF SOURCE: Tr. Gos. n. -i. i proyekt. in-ta splavov i obrabotki tsvetn. met.,  
vyp. 24, 1965, 284-297

TOPIC TAGS: wire, fine wire, wire protection, wire drawing 18

ABSTRACT: Wire 0.1 to 0.08-mm in diameter can be drawn from aluminum (99.9992%) by single-stage or multistage machines. However, for drawing wire (< 1.2 mm in diameter) from high-purity aluminum special conditions are necessary. Drawing must be done at -60C to 70C at speeds which eliminate the possibility of recrystallization (30 to 40 m/sec). The lowering of temperature of metal to -60C to 70C increases tensile strength of aluminum by 20 to 25%, with practically no changes in length. Based on stability conditions of the drawing process and the safety factors at room temperature, 18-25% reductions in one pass are recommended. It was determined that the technology of wire production

Card 1/2 UDC: 669.621.771.42:669.41

L 02357-67

ACC NR: AR6028432

by rolling with subsequent drawing through diamond draw plates preserves the initial aluminum purity. Lubricants for drawing high-purity aluminum are suggested. Orig. art. has: 6 figures and 1 table. The bibliography has 11 references. L. Kachenova. [Translation of abstract].

SUB CODE: 13/

Card 2/2

DYMOV, A.V.; KORENEVA, V.V.

Indirect photometric method of determining small amounts of  
aluminum in iron alloys. Izv.vys. ucheb. zav.; Chern. met. no.3:192-  
196 '61. (MIRA 14:3)

1. Moskovskiy institut stali.  
(Iron alloys—analysis)  
(Photometry)



SOV/133-59-6-13/41

AUTHORS: Kornfel'd, V.N., Candidate of Technical Sciences,  
Voytov, A.O., Koshelev, V.I., Shorin, A.F. and  
Dymov, B.K., Engineers

TITLE: Thermal Performance of an Open Hearth Furnace when  
Blowing Oxygen or Oxygen Water Mixture into the Bath  
(Teplovaya rabota martenovskoy pechi pri produvke  
metalla)

PERIODICAL: Stal', 1959, Nr 6, pp 513-520 (USSR)

ABSTRACT: Thirty eight experimental heats with blowing oxygen  
into the metal bath were carried out on a 200 ton open  
hearth furnace operating with 70% of hot iron. The  
moment of the beginning of blowing was varied. In  
order to decrease the formation of fumes during blowing  
in some heats, water was introduced into the oxygen  
stream (0.7 - 0.9 litres per 1 m<sup>3</sup> of oxygen). The  
consumption of oxygen during blowing varied from 25 to  
35 m<sup>3</sup>/min and when using water additions from 27 to  
37 m<sup>3</sup>/min. Thermal load during the experimental heats  
was manually controlled on the basis of systematic  
analyses of the combustion products in vertical flues

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or Oxygen Water Mixture into the Bath

and temperatures of the roof (magnesite chromite) and the top of the air regenerators (upper layers - forsterite bricks). In some moments of the heats the thermal load was limited by draught capacity of the furnace. The oxygen supply to flame was cut off during blowing period in order to economise oxygen. The experimental results obtained are shown in Figures 1 - 8. It was found that: 1) Due to an acceleration of decarburisation of metal and an intensification of the evolution of CO from the bath, thermal load during blowing is considerably decreased. Correspondingly the mean thermal load for the whole decarburisation period (from charging of hot iron to the end of blowing) also decreases. 2) When the blowing is started at an optimal moment, the course of heat in the thermo-technological sense substantially differs from the usual one for the open hearth process. Under experimental conditions the mean thermal load during blowing was decreasing to 14 million cal/hr, whereupon

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during 30 - 40 minutes it actually amounted to 5 - 6 mil cal/hr and during 15 - 20 minutes of the most violent evolution of CO from the bath, the supply of fuel was completely stopped. 3) The mean thermal load for the whole decarburising period (from charging hot iron to end of blowing) was actually determined by the proportion of the period taken for blowing, the earlier the blowing was started, the lower was the mean thermal load for this period. 4) The absorption of heat by the bath (per unit of time) and the coefficient of the utilisation of the furnace working space increases during blowing. On average during blowing as well as during the decarburisation period the above factors were higher the earlier blowing was started. 5) The period of decarburisation decreases more, the earlier blowing is started, whereupon the rate of decrease of the decarburising period increases faster than the rate of increase of the rate of heat absorption by the bath. Therefore, if blowing was started too early, the metal remains

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insufficiently heated when the blowing is finished and it is necessary to heat it further under inconvenient conditions of decarburised bath. A rational relationship of the duration of the decarburising period and intensity of heating up metal will be obtained only if the blowing is started at an optimal moment, as only then will the maximum thermo-technical effect be obtained. Under experimental conditions, the average specific consumption of conventional fuel for heats in which the blowing was started at the optimum moment decreased to 87 kg/t (with specific consumption of oxygen 37 m<sup>3</sup>/t, including 22 m<sup>3</sup>/ton added to flame before starting blowing). 6) On the addition of water to the stream of oxygen for the prevention of excessive fuming, the abovementioned relationship remains valid. However, as a proportion of heat is consumed for the evaporation of water and heating up of the steam formed to a

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